MDT
Montana Department of Transportation
2701 Prospect Avenue
PO Box 201001
Helena MT 59620-1001
Michael T. Tooley, Director
Steve Bullock, Governor

February 4, 2016

Brian Hasselbach
Federal Highway Administration (FHWA)
585 Shepard Way, Suite 2
Helena, Montana 59601

Subject: Statewide Programmatic Categorical Exclusion for Pavement Preservation Project
NH 1-1(100)0
Jct S-508 - E & W
UPN 8956000

Dear Brian Hasselbach:

The MDT Environmental Services Bureau has reviewed the Preliminary Field Review/Scope of Work Report (PFR/SOW) for the subject project. Based on the completed Environmental Checklist for Pavement Preservation Projects (Checklist), we conclude that the Statewide Programmatic Categorical Exclusion for these types of projects would cover this project. For your information, I have attached a copy of the PFR/SOW (including the location map) and the signed Environmental Checklist. Environmental related Special Provisions will be included in the contract plans.

If you have questions or concerns, please contact Susan Kilcrease at 523.5842 or me at 444.7203. We will be pleased to assist you.

Sincerely,

Heidy Bruner, P.E.
Environmental Services Bureau Engineering Section Supervisor

Attachments: PFR/SOW Report, Environmental Checklist

Enclosure

e-copies w/checklist encl.:
Ed Toavs, Missoula District Administrator
Tom Martin, P.E., Environmental Service Bureau Chief
Heidy Bruner, P.E., ESB Engineering Section Supervisor
Lesly Tribelhorn, P.E., Highways Engineer
Suzy Price, Contract Plans Bureau Chief
Lisa Hurley, Fiscal Programming Section Supervisor
Tom Erving, Fiscal Programming Section
Susan Kilcrease, Missoula District Project Development Engineer
Ben Nunnallee, EPS Project Manager
Montana Legislative Branch Environmental Quality Council
File
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(FOR PROJECTS WITH NO RIGHT-OF-WAY INVOLVEMENT)

Applicant cannot be authorized to proceed with the proposed work until ALL of the conditions of the checklist have been satisfied.

ENVIRONMENTAL CHECKLIST FOR PAVEMENT PRESERVATION PROJECTS
(CRACK SEALING, SEAL & COVER, THIN OVERLAYS, MILL & FILL, PLANT MIX LEVELING, MILL OGFC, MICRO SURFACING, FOG SEAL)

Project Number: NH 1-1(100)0 **Control No** 8956000 **Project Name:** Jct S-508 - E & W

Reference Post (Station): 0.0 (853+96.71) **To Reference Post (Station):** 8.2 (588+35.31)

Applicant's Name: Montana Department of Transportation **Address:** PO Box 201001; Helena, MT 59620-1001

Type of Proposed Pavement Preservation Activity: Work Type 180 – Resurfacing - Overlay, Seal & Cover

IMPACTS ON THE PHYSICAL ENVIRONMENT (TO BE COMPLETED BY APPLICANT)				
	Impact Questions	[Y/N] There are Potential Impacts; or Item Requires Documentation, Evaluation, Mitigation Measures, and/or (a) Permit(s).		
		Yes	No	Comment (Use attachments if necessary)
1.	Does the proposed action require work in, across, and/or adjacent to a listed or proposed Wild or Scenic River? (See http://www.rivers.gov/wildriverslist.html)	☐	☒	
2a.	Are there any listed or candidate threatened or endangered species in the vicinity of the proposed activity?	☒	☐	The Kootenai River is in the project vicinity and is occupied by bull trout. It is also designated as bull trout critical habitat. The project limits cross the Yaak River which is occupied by bull trout but is not designated as Critical Habitat. The project limits are within the Cabinet-Yaak Grizzly Bear Recovery Zone.
2b.	Will the proposed action adversely affect listed or candidate threatened or endangered species, or adversely modify critical habitat?	☐	☒	The project as proposed will not impact the Kootenai or Yaak Rivers. Due to the limited scope and conservation measures to be implemented, the project will not adversely affect grizzly bear.
3.	Will the proposed action have potential to affect water quality? If 'Yes', an environment-related permit or authorization may be required. If 'No', go to question 4.	☐	☒	
3a.	If the answer to question 3 is yes, is a Clean Water Act Section 402 permit (i.e., MPDES or NPDES permit)required? (Need for an MPDES or NPDES is generally triggered by a disturbance area equal to or greater than one acre.)	☐	☐	☒ N/A
3b.	Is the proposed project within an MS4 Permit Area? (See http://deq.mt.gov/wqinfo/MPDES/StormWater/ms4.mcpx). (Billings, Great Falls, and Missoula Urbanized areas, and Butte, Bozeman, and Helena)	☐	☒	
4.	Does the proposed project have impacts to wetlands , streams, or other water bodies? If 'No', go to question 5.	☐	☒	
4a.	If the answer to question 4 is 'Yes', is a Clean Water Act Section 404 permit authorization required?	☐	☐	☒ N/A
4b.	If the answer to question 3 or 4 is 'Yes', is a Stream Protection Act 124SPA consultation required?	☐	☐	☒ N/A
5.	Are solid wastes, hazardous materials or petroleum products likely to be encountered? (For example, project occurs in or adjacent to Superfund sites, known spill areas, underground storage tanks, or abandoned mines.) (See http://nris.mt.gov/deq/remsitequery/portal.aspx)	☐	☒	
6.	Is the proposed activity on and/or within approximately 1 mile of an Indian Reservation? If answer is 'No', go to question 7.	☐	☒	
6a.	Are any Tribal water permits required?	☐	☐	☒ N/A
7.	Is the proposed project in a "Class I Air Shed" or a nonattainment area? (See http://deq.mt.gov/AirQuality/Planning/AirNonattainment.mcpx) (Class I Air Sheds include the Northern Cheyenne, Flathead, and Fort Peck Reservations; Glacier and Yellowstone National Parks; Anaconda-Pintlar, Bob Marshall, Cabinet Mountains, Gates of the Mountains, Medicine Lake, Mission Mountain, Red Rock Lakes, Scapegoat, Selway-Bitterroot, and U.L Bend Wilderness Areas)	☐	☒	

Project Number: NH 1-1(100)0 Control No.: 8956000 Project Name: Jct S-508 - E & W

Checklist prepared by:

Hunter Dow	**Roadway Designer**	**12/22/2015**
Applicant	**Title**	**Date**
Approved by:	ENVIRONMENTAL ENGINEERING SECTION SUPERVISOR	2/4/16 Click here to enter a date.
Environmental Services	**Title**	**Date**

(When any of the above questions are checked "Yes")

The Applicant is **not** authorized to proceed with the proposed work until the checklist has been reviewed and approved, as necessary, and any requested conditions of approval have been incorporated.

A. Complete the checklist items 1 through 7, indicating "Yes" or "No" for each item. Include comments, explanations, information sources, and a description of the magnitude/importance of potential impacts in the right hand column. Attach additional and supporting information as needed. The checklist preparer, by signing, certifies the accuracy of the information provided.

B. When "Yes" is indicated on any item, the checklist preparer must explain why and provide the appropriate documentation, evaluation, permit, and/or mitigation measures required to satisfy environmental concerns for the project. Use attachments if necessary. **Any proposed mitigation measures will become a condition of approval.**

C. If the applicant checks "Yes" for any one item, the checklist and MDT's mitigation proposal, documentation, evaluation and/or permit shall be submitted to MDT Environmental Services Bureau. Electronic format is preferred. Contact Number 444-7228.

D. When the applicant checks a "Yes" item, MDT cannot be authorized to proceed with the proposed work until Environmental Services Bureau reviews the information and signs the checklist.

E. MDT will obtain all necessary permits or authorizations from other entities with jurisdiction prior to beginning the Pavement Preservation Activity.

F. The links above are provided as a starting point for potential sources of information for completing the checklist. The Applicant is encouraged to consult Environmental Services Bureau and/or other information sources.

Montana Department of Transportation
PO Box 201001
Helena, MT 59620-1001

Memorandum

To: Distribution

From: Lesly Tribelhorn, P.E.
Highways Engineer

Date: December 22, 2015

Subject: NH 1-1(100)0
Jct S-508 - E & W
UPN 8956000
Work Type 180 – Resurfacing–Asphalt (thin lift ≤ 0.20')(including Safety Improvements)

Attached is the Preliminary Field Review Report/Scope of Work Report which was approved on ___1/5/2016_____.

We request that those on the distribution review this report and submit your concurrence within two weeks of the approval date.

Your comments and recommendations are also requested if you do not concur or concur subject to certain conditions. When all personnel on the distribution list have concurred, and the environmental documentation is approved, we will submit this report to the Preconstruction Engineer for approval.

I recommend approval:

Approved *Dustin Rouse for Lesly Tribelhorn* Date 1/5/2016

Distribution:
Ed Toavs, District Administrator
Kent Barnes, Bridge Engineer
Lesly Tribelhorn, Highways Engineer
Roy Peterson, Traffic and Safety Engineer
Robert Stapley, Right-of-Way Bureau Chief
Tom Martin, Environmental Services Bureau Chief
Lynn Zanto, Rail, Transit, & Planning Division Administrator
Kevin Christensen, Construction Engineer
Matt Strizich, Materials Engineer
Jon Swartz, Maintenance Division Administrator

cc:
Dawn Stratton, Fiscal Programming Section
Ben Nunnallee, EPS Project Manager
Bill Squires, District Road Design Area Engineer

e-copies:
Located at the end of this document

Montana Department of Transportation
PO Box 201001
Helena, MT 59620-1001

Memorandum

To: Lesly Tribelhorn, P.E.
Highways Engineer

From: Ben Nunnallee, P.E.
Missoula District Projects Engineer

Date: December 22, 2015

Subject: NH 1-1(100)0
Jct S-508 - E & W
UPN 8956000
Work Type 180 – Resurfacing–Asphalt (thin lift ≤ 0.20')(Pave Pres) (including Safety Improvements)

Please approve the attached Preliminary Field Review Report/Scope of Work Report.

Approved *Dustin Rouse for Lesly Tribelhorn* Date 1/5/2016

Lesly Tribelhorn, P.E.
Highways Engineer

The same report is also being distributed under a separate cover as a Scope of Work Report for comments and approval recommendations.

cc (w/attach.):
Damian Krings, Road Design Engineer

Introduction

An onsite field review was held on September 15, 2015. The following people attended:

Ben Nunnallee – Missoula District Projects Engineer
Nathaniel Walters – Missoula District Design Supervisor
Andrew White – MDT Surfacing Design
Hunter Dow– Missoula District Road Design
Mike Dodge - District Materials Supervisor

Proposed Scope of Work

A full width 0.20 ft deep mill & overlay (mill/fill) and seal & cover is proposed for this project from RP 0.0 to RP 8.2. A final fog seal will be placed over the top of the seal & cover. Guardrail end sections will be replaced throughout the entirety of the project and end section widening will be added to accommodate the new end sections. Delineation, shoulder rumble strips, and centerline rumble strips will be included throughout the project length. The existing signing will be upgraded and replacement of the pavement markings will also be included.

Purpose and Need

The purpose of this project is to preserve the existing pavement to extend the service life of the existing asphalt surfacing. This section of highway is due for pavement resurfacing before the deterioration of the pavement begins to accelerate.

Project Location and Limits

The project is located in Lincoln County on the National Highway system (N-1, U.S. Hwy 2). The project begins on the Idaho/Montana state line at Reference Point (RP) 0.0, English Station 853+96.71 on As-Built plans F 1-1(28)0. The project extends southeast 8.2 miles to RP 8.2±, English Station 588+35.31 on As-Built plans F 1-1(28)0. The end of the project is 5.5 miles northwest of Troy, MT. Within the project there is one major intersection located at RP 3.8 and it is the junction of S-508 and US Hwy 2. The stationing of the As-Built projects increases from west to east which is the same as the reference posts which also increase from west to east. Stationing from the As-Builts will be used to define this project.

This segment of road is located in these Townships, Ranges, and Sections:

- T 33 N, R 34 W, Sections 8, 17, 20, 21, 28, 27, 34, 35
- T 32 N, R 34 W, Sections 5, 8, 9, 16

N-1 is on the National Highway System and is functionally classified as a Principal Arterial – Non-Interstate. See the attached location map.

Work Zone Safety and Mobility

At this time, Level 2 construction zone impacts are anticipated for this project as defined in the Work Zone Safety and Mobility (WZSM) guidance. The plans package will include a Transportation Management Plan (TMP) consisting of a Traffic Control Plan (TCP). A limited Public Information (PI) component to address public notification will also be included. These issues are discussed in more detail under the Traffic Control and Public Involvement sections.

Physical Characteristics

The existing terrain within the project limits is rolling. The roadway travels through timber, farm, private land, and past occasional commercial properties.

This section of National Highway Route 1/ US 2 was reconstructed in 1951 and this project went from RP 0 to RP 14 under As-Built project number FHP A1, C4. In 1954, bituminous surface treatment was placed from RP 0 to RP 2.6 under As-Built project number FHP 1-A2, C5. In 1958, another surface treatment was placed from RP 0 to RP 2.598 under As-Built project number FHP A1, C4 & 1-A2, C5. Since then there have only been two projects completed on this section of roadway. In 1992, a structure widening was done under As-Built project number BHF 1-1(22)6, and then a plant mix overlay as well as slope flattening done in the same year from RP 0 to RP 13.5 under As-Built project number F 1-1(28)0. The Yaak River Bridge at RP 6.0 is the only structure contained within these project limits and it was constructed in 1934 under As-Built project number FHP E1-C.

RP		As-Built Station (English)		Width	Seal & Cover	P. M.S	C.B.C	PROJECT	REMARK	
FROM	TO									
0	8.2	*853+96.71	*588+35.31	24'	X	0.467'	0.375'	F 1-1(28)0	1991	Reconstruct done in 1951

*Contains Equations

Surfacing depths listed above are from As-Builts and the Montana Road Log 2013.

The Missoula District Lab completed a core sample analysis for this project on October 7, 2015. The first core was sampled at RP 0.0 and they continued to take core samples in ½ mile increments in the travel lanes. The last core was taken at RP 8.5. Here are some of the findings:

- Minimum core depth = 0.35 feet
- Maximum core depth = 0.81 feet
- Average core depth = 0.65 feet
- Average top layer depth = 0.17 feet (Moisture Damaged: Loss of sheen, dull appearance, and some small and large aggregate is uncoated)
- Stripping increases as the plant mix layers get deeper with the bottom layer being severely stripped.

The MDT Non-Destructive Testing unit also tested and analyzed the GPR (Ground Penetrating Radar) data for this project. The average plant mix depth is 0.66 feet and ranges from a minimum of 0.32 feet depth to a maximum of 1.18 feet depth which were both isolated areas.

Surfacing inslopes are generally 4:1 with steep adjacent fill and cut slopes. There is guardrail located in various locations throughout the project length.

There is one structure on this project:

Bridge Number	Feature Crossed	Reference Post	As-Built Stationing	Width x length
P00001 006+0.352-1	Yaak River	6.4	485+57.0 to 487+67.0	40.75' x 210.0'

The existing horizontal alignment consists of 2 simple curves and 16 spiral curves. All of the curves were evaluated against current MDT design standards for a 60 mph design speed. Seven of the 18 horizontal curves do not meet the minimum radius of 1200', information for deflections without curves (PI) was not found in the As-Built plans. All of the curves are flatter or meet the maximum super (%) of 8%, however, 12 of the 18 curves do not have the required amount of superelevation required for their radius, though more than half of these only barely do not meet the design criteria. The curves from Sta 417+75.73 on are in a twisty section of roadway that climbs up and away from the adjacent Kootenai River. The roadway is benched in with a steep

dropoff on the river side and steep cut slopes and rock faces on the uphill side. This stretch of road is signed with winding road warning signs (W1-5) and 40 mph advisory speed plaques. Following is a table summarizing the horizontal curve data.

Horizontal Curves							
As-Built PI Station	Radius (ft)	Length (ft)	Length of Spiral (ft)	As-Built Super (%)	Super (%) (meeting current standards)	Design Speed Provided (mph)	Remarks
862+46.86	2864.79	558.17	400	5	no	59	
891+80.85	5729.58	1867.42	N/A	3	yes	>60	
925+03.14	2291.83	297.96	400	6	no	59	
947+36.06	2291.83	1048.79	400	6	no	59	
984+12.38	7639.44	1662.22	N/A	2	no	56	Curve data and roadway do not
300+08.21	2864.79	395.83	400	5	no	59	
336+72.72	2864.79	340	400	6	yes	>60	
380+54.48	1273.24	620.74	240	8	yes	>60	
393+48.32	1909.86	945.56	200	7	yes	>60	
408+30.92	1432.4	110.21	200	8	yes	>60	
417+75.73	636.62	126.48	200	8	no	46	Does not meet minimum Radii requirement
424+16.35	603.11	169.82	140	8	no	45	Does not meet minimum Radii requirement
429+10.79	477.46	173.75	150	8	no	41	Does not meet minimum Radii requirement
434+24.26	477.46	203.26	150	8	no	41	Does not meet minimum Radii requirement
439+16.89	1145.91	130.33	140	8	no	58	Does not meet minimum Radii requirement
443+78.26	1909.86	260	120	7	yes	>60	
455+31.64	1041.74	553.48	200	8	no	56	Does not meet minimum Radii requirement
465+04.45	818.51	346.67	200	8	no	51	Does not meet minimum Radii requirement

There are 33 vertical curves on this project. All vertical curves were evaluated against current MDT design standards for a 60 mph design speed. There was very limited data for the vertical curves. Stationing was unavailable for 16 out of the 33 vertical curves and the grade (%) was unavailable for 17 out of 33 vertical curves. At least 4 of the grades that we have data for exceed the maximum grade of 4.0%. The maximum gradient on the project is 6.13%. Also one of the sag curves that we have data for, at PI Sta. 471+00.00, does not provide the required stopping sight distance required for the design speed. This curve is located at the bottom end of the descending grade of the winding road section as it approaches the bridge over the Yaak River. Following is a table summarizing the vertical curve data.

Vertical Curves					
As-Built PI Station	Length (ft)	Grade_1 (%)	Grade_2 (%)	Elevation (ft)	Remarks
870+00.00	400.00	+3.00	+0.30	2268.90	
879+50.00	400.00	+0.30	-0.90	2271.60	
886+50.00	400.00	-0.90	+1.20	2265.30	
897+00.00	200.00	+1.20	-0.10	2277.90	
903+00.00	200.00	-0.10	-0.70	2277.30	
917+00.00	200.00	-0.70	N/A	2267.50	
921+60.00	200.00	N/A	N/A	2260.14	
950+80.00	800.00	+0.10	-3.40	2263.08	
967+00.00	1000.00	-3.40	+1.81	2208.00	
989+50.00	200.00	+1.81	+0.96	2248.66	
N/A	600.00	N/A	N/A	2180.61	
N/A	400.00	N/A	N/A	2194.50	
N/A	700.00	N/A	N/A	2215.18	
N/A	600.00	N/A	N/A	2196.56	
N/A	600.00	N/A	N/A	2223.72	
N/A	600.00	N/A	N/A	2229.19	
N/A	600.00	N/A	N/A	2257.27	
N/A	400.00	N/A	N/A	2195.67	
N/A	1200.00	N/A	N/A	2242.00	
417+50.00	400.00	-5.02	-5.48	2101.94	Exceeds Maximum Grade
N/A	N/A	-5.48	-5.52	N/A	Grade Break
N/A	N/A	-5.52	-5.36	N/A	Grade Break
N/A	N/A	-5.36	-5.62	N/A	Grade Break
N/A	N/A	-5.62	-5.66	N/A	Grade Break
451+50.00	400.00	-5.66	-6.13	1913.39	Exceeds Maximum Grade
457+50.00	400.00	-6.13	-5.61	1876.61	Exceeds Maximum Grade
471+00.00	480.00	-5.61	-0.70	1800.31	Exceeds Maximum Grade, VC Provides SSD for 50mph
491+00.00	200.00	-0.70	-1.35	1793.40	
494+50.00	400.00	-1.35	0.00	1788.61	
503+50.00	400.00	0.00	+1.80	1788.67	
509+50.00	400.00	+1.80	N/A	1799.47	
N/A	200.00	N/A	N/A	1797.45	
N/A	400.00	N/A	N/A	1788.32	
N/A	800.00	N/A	N/A	1788.32	
N/A	300.00	N/A	N/A	1793.77	
N/A	1400.00	N/A	N/A	1802.67	
N/A	600.00	N/A	N/A	1798.87	
N/A	800.00	N/A	N/A	1802.24	

The Pavement Management System generated the following performance indices for the survey year 2014 and treatment recommendations for the years 2015 and 2017:

TREATMENT YEARS 2015 & 2017

BEG RP	END RP	RIDE	RUT	ACI	MCI	CONST. TREAT. REC.
0	13.72	68.3 (fair)	55.0 (fair)	91.4 (good)	99.5 (good)	Thin Overlay (’15), Minor Rehab - Rut (’17)

Traffic Data

RP 0.0 to 8.2

2015 AADT	1,370 - Present
2018 AADT	1,410 - Letting Year
2038 AADT	1,720 - Design Year
DHV	220
T	8.4%
EAL	56
AGR	1.0% (Annual)

Crash Analysis

Safety Management completed a crash analysis for the ten-year period from 01/01/05 through 12/31/14 for the segment RP 0.0 to RP 8.2:

Total Recorded Crashes:	57
Fatal Injury Crashes:	1 (1 fatality, 2 injuries)
Incapacitating Injury Crashes:	10 (13 injuries)
Non-incapacitating Injury Crashes:	12 (14 injuries)
Possible Injury Crashes:	5 (6 injuries)
Non-injury Crashes:	29

Of the 57 total crashes, 48 were non-junction crashes, 5 either occurred within an intersection or were intersection-related, and 4 were driveway access related. A majority of the intersection related crashes (5) occurred at the intersection of US 2 & S-508. The remainder of the crashes occurred at farm field/driveway approaches or other public access approaches.

Segment Summary – Non-Intersection Related Crashes						
Segment Number	**Beginning RP**	**Ending RP**	**Property Damage Only Crashes**	**Injury Crashes**	**Fatal Crashes**	**Total Crashes**
Entire Project	0.0	8.200	25	23	0	48
Segment 1	0.0	2.620	5	3	0	8
Segment 2	2.620	8.200	20	20	0	40
Segment 2a	2.620	5.410	7	9	0	16
Segment 2b	5.410	8.200	13	11	0	24

- Table does not include the 2 additional crashes reported from January 1, 2015 to August 11, 2015. Both reported crashes were Non-Intersection Related.

In general, Segment 1 of this portion of P-1 is performing at a Level of Service of Safety (LOSS) II and Segment 2 is generally performing at a LOSS III. For fatal and injury crashes, Segment 1 is performing at a LOSS II (low to moderate potential for crash reduction) and Segment 2 is performing at a LOSS IV (high potential). For total crashes as well as injury and fatal crashes, Segment 1 is operating at LOSS IV from RP 0.0 to RP 0.6 and operating at a LOSS III rating from RP 0.6 to RP 0.9 and from RP 1.1 to RP 1.8, with the remainder of the sections in Segment 1 operating at a LOSS II rating. From a total crash perspective as well as an injury and fatal crash perspective, Segment 2 operates at LOSS IV from RP 3.9 to RP 4.8, RP 5.0 to RP 6.2 and RP 6.5 to RP 7.1.

The following crash patterns were exhibited for total crashes:

- Injury (Segment 2)
- Tree (Segment 2)
- Injury (Segment 2a)
- Off Road Left (Segment 2a)
- Injury (Segment 2b)
- Off Road Right (Segment 2b)

Three locations have been identified as crash clusters within the study limits over the 10-year study period. Crash clusters are listed below with assigned project scope if one was programmed:

- RP 3.5 to RP 4.8 - Safety Engineering Section recommended the installation of additional signing and upgrading of existing intersection signing. Solar flashers were also installed above the Stop signs as well as intersection ahead signing. Improvements were installed under HSIP 1-1(88)4, SF 099 – W of Troy Jct S-508, UPN 7210000.
- RP 5.1 to RP 5.8 - The Safety Engineering section recommended the installation of standard delineation from the Yaak Bridge to the crest of Yaak Hill. Improvements were installed in April 2014 under HSIP (213), SF 129 - Misc Safety - Maintenance, UPN 3329000.
- RP 3.43 to RP 7.09 – The crash trends were addressed under previously mentioned projects and no further recommendation was made.

In 2010, UPN 7493000, SF 109 – Msla Horizontal Curve Signing, HSIP STWD(101) project was nominated. This project evaluated all existing horizontal curve signing districtwide and will upgrade all signing where necessary to meet current MUTCD standards. This project has been Let and is anticipated to be completed by the beginning of 2016.

The following are suggestions that Traffic and Safety would like to be examined (followed by our responses addressing each suggestion):

- The majority (7 out of 13) of the tree collisions occurred between RP 3.5-4.5. Three of these occurred at the intersection of S-508. Removing trees within the clear zone between RP 3.5-4.5 should be considered.
- *Response: Trees within the clear zone will be evaluated and removed by Maintenance should any be found within the clear zone in the road right-of-way.*
- Centerline rumble strips should be considered as this section of N-1 was identified as meeting the cost effectiveness threshold for the installation of this countermeasure.
- *Response: Type 2 centerline rumble strips will be installed with this project.*
- New guardrail ends will be installed throughout the entirety of the project.
- After a meeting with the rumble strip committee, it has been decided that the entire project will receive 6” wide intermittent shoulder rumble strips that will be placed adjacent to the outside edge of the fog line.

<u>Major Design Features</u>

This project will be developed in accordance with the latest Guidelines for Nomination and Development of Pavement Projects. The plans will be developed in English units.

a. **Design Speed.** The geometric design criteria for Principal Arterial – Non-Interstate indicate that the design speed should be 60 mph based on the rolling terrain. The posted speed limit from RP 0.0 to RP 8.2 is 70/65 (day/night) mph for cars and 60/55 (day/night)

mph for trucks. Design speed is not an applicable design criterion for pavement preservation projects.

b. **Horizontal Alignment**. The existing horizontal alignment will not be changed with this pavement preservation project.

c. **Vertical Alignment**. The existing vertical alignment will not be changed with this pavement preservation project.

d. **Typical Sections and Surfacing**. The current typical section widths will remain unchanged. The roadway will receive a 0.20' mill and a 0.20' overlay (Grade S – 1/2" and PG Binder 64-28) followed by a chip seal (Cover Type 1 and CRS-2P seal oil) and then a fog seal on top of the chip seal.

e. **Geotechnical Considerations**. There will be guardrail widening for the new guardrail end sections throughout the limits of the project.

f. **Hydraulics**. There are no hydraulics considerations for this pavement preservation project.

g. **Bridges.** There will be no work done to the single bridge that falls within the project limits.

h. **Traffic.** The existing pavement marking layout will be used to re-stripe the roadway. All roadside delineators will also be replaced. Traffic Engineering will provide the quantities, details, and specifications for interim paint, final epoxy, and delineator replacement.

i. **Pedestrian/Bicycle/ADA**. There are no dedicated pedestrian or bicycle facilities. Due to the nature of this pavement preservation project, no new accommodations will be added. Despite the narrow shoulders, this route is used by touring bicyclists.

j. **Miscellaneous Features**.
   - Several mailbox turnouts and the chain up areas will be chip sealed.
   - All existing guardrail ends within the limits of the project will be replaced.
   - 6" wide intermittent shoulder rumble strips will be installed along the entire project length. The rumble strips will be placed adjacent to the outside edge of the fog line.
   - Type 2 centerline rumble strips will be installed along the entire project length.

k. **Context Sensitive Design Issues**. There are no special context sensitive design issues identified for this pavement preservation project.

Other Projects

There is only one other project currently in the vicinity of this project.

- UPN 8886000, US 2, RP 6.4 and 11.6, Steel Br Rehab – Corrosion 1, Bridge structure rehab (Construction Date TBD)

Due to timing and scope difference, it is not likely that this project will be tied with this project for construction.

Location Hydraulics Study Report

A Location Hydraulics Study Report will not be needed for this pavement preservation project.

Design Exceptions
The design exception process generally does not apply to pavement preservation projects. However, as previously noted, the existing 2' shoulder widths are less than the 8' width shown in the Route Segment Plan, there are 7 horizontal curves that have radii less than the minimum required, 12 horizontal curves which have less than the required superelevation at least 4 vertical grades steeper than the maximum, and at least one vertical curve which provides insufficient stopping sight distance. Data for portions of the vertical alignment is unavailable, so we were unable to check all of the vertical alignment.

Right-of-Way
There will be no right-of-way involvement on this pavement preservation project.

Access Control
This section of highway is not an access control facility. This project will not include access control.

Utilities/Railroads
Utilities – There will likely be no utility involvement on this pavement preservation project. Survey has been requested to verify that there are no utilities in the locations of the guardrail end section replacements.

Railroads – There are no railroads within the area of this project.

Maintenance Items
We will coordinate with Maintenance regarding the issue of potential tree removal within the clear zone at the S-508 intersection as noted in the Crash Analysis section.

Intelligent Transportation Systems (ITS) Features
Implementation of ITS solutions will not be included with this pavement preservation project.

Survey
A topographic survey was requested to obtain sufficient information to design the areas where there will be new guardrail end sections. The survey was requested on (10/16/2015).

Public Involvement
A Level A public involvement plan is appropriate for this project. A News Release explaining the project and including a department point of contact will be distributed to the local media.

Environmental Considerations
No significant environmental impacts or issues were identified. We reviewed the project and determined it meets the criteria for the Programmatic Agreement as a Categorical Exclusion under the provisions of 23 CFR 771.117(d) as signed by MDT on February 18, 2005 and concurred by FHWA on March 4, 2005. The Environmental Checklist for Pavement Preservation Projects has been submitted separately.

Energy Savings/Eco-Friendly Considerations
The "RAP Incentive Special Provision" (401-3) will be utilized and the disposal of the remaining millings will be discussed with both MDT Maintenance and Lincoln County.

Experimental Features
There are no experimental features identified for this pavement preservation project.

Traffic Control
Traffic will be maintained through the construction of the project with appropriate signing, flagging, pilot cars, etc., in accordance with the Manual on Uniform Traffic Control Devices. The work zone will require single lane closures during construction operations. A minimum of one lane will remain open for traffic at all times during the construction of this project. Possible stipulations governing the time of year, the days of the week during which construction activities may take place, time of day, and maximum length of roadway that may be under construction at a time may be specified in the contract in order to minimize public impact.

A Transportation Management Plan (TMP) consisting of a Traffic Control Plan (TCP) is appropriate for this project. Due to the relatively simple nature of the work, the TCP will consist of only special provisions.

Preliminary Construction Cost Estimate
The nomination cost estimate (without IDC) that was originally programmed for this project was $2,530,000 (CN = $2,300,000 and CE = $230,000). The total nomination cost estimate including IDC and inflation was $3,017,007.

Current Cost Estimate:

	Estimated cost	**Inflation (INF) (from PPMS)**	**TOTAL costs w/INF + IDC (from PPMS)**
Road Work	**$1,752,000**		
Traffic Control	**$47,000**		
Subtotal	**$1,799,000**		
Mobilization (10%)	**$180,000**		
Subtotal	**$1,979,000**		
Contingencies (8%)	**$158,000**		
Total CN	**$2,137,000**	**$73,092**	**$2,439,278**
CE (10%)	**$214,000**	**$7,319**	**$244,269**
TOTAL CN+CE	**$2,351,000**	**$80,411**	**$2,683,547**

Note: Inflation is calculated in PPMS to the letting date. If there is no letting date, the project is assumed to be inside the current TCP and is given a maximum of 5 years until letting. IDC is calculated at 10.37% as of FY 2016.

Preliminary Engineering
The anticipated level of Preliminary Engineering for this project will not be too significant seeing as this pavement preservation project is relatively simple to design and does not have any complex design issues. The nominated PE amount for this project should suffice.

Project and Risk Management
The Missoula District Design Crew will be responsible for developing the plans. Ben Nunnallee will manage the design of this project. See contact information below:

Ben Nunnallee, P.E.
Montana Department of Transportation

2100 West Broadway, PO Box 7039
Missoula, MT 59807-7039
(406) 523-5846
e-mail: bnunnallee@mt.gov

This project is not considered a Project of Division Interest (PoDI) by FHWA.

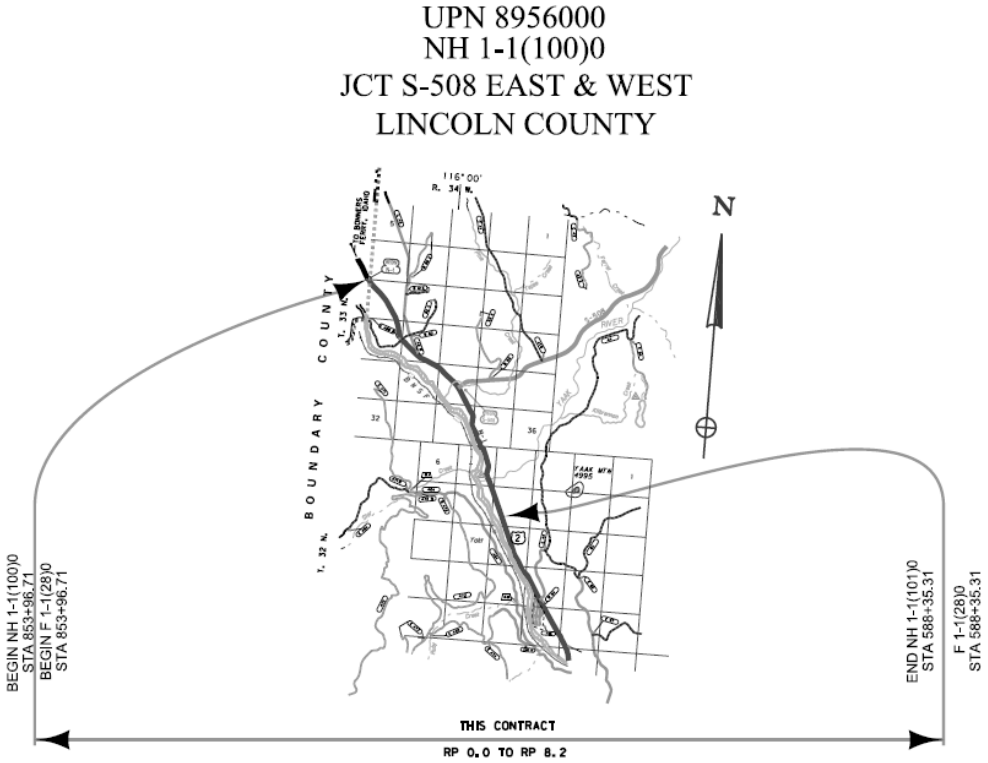
There are no current risks to the project cost and schedule. This is a relatively simple design project and there is no active management strategy.

Ready Date

The project has a Ready Date of October 1, 2016. The Letting Date currently established for this project is January 25, 2017. The project is currently about five months ahead of schedule in OPX2.

Site Map

The project site map follows.



e-copies:

Dwane Kailey, Engineering, Chief Engineer
Dustin Rouse, Highways Design Engineer
Dave Hedstrom, Hydraulics Engineer
K.C. Yahvah, District Hydraulics Engineer
Bryce Larsen, Supervisor, Photogrammetry & Survey
Bill Semmens, Environmental Resources Section Supervisor
Joe Weigand, District Biologist
Susan Kilcrease, Dist. Environmental Project Engineer
Danielle Bolan, Traffic Operations Engineer
Ivan Ulberg, Traffic Design Engineer
Gabe Priebe, District Traffic Project Engineer
Kraig McLeod, Safety Engineer
Chris Hardan, District Bridge Area Engineer
Chad Richards, Engineering Cost Analyst
John Pirre, Engineering Information Services
Jan Nesset, Public Involvement Officer
Sue Sillick, Research Section Supervisor
Suzy Price, Contract Plans Bureau Chief
Bob Vosen, District Construction Engineer
Dean Jones, District Construction Operations Engineer
Ray Sacks, Construction Bureau
Michelle Erb, Bicycle/Pedestrian Coordinator
Sheila Ludlow, Transportation Planner
Matt Maze, ADA Coordinator
Jake Goettle, Construction Bureau – VA Engineer
Shane Stack, District Preconstruction Engineer
Ben Nunnallee, District Projects Engineer
Mike Dodge, District Materials Supervisor
Justun Juelfs, Dist. Maintenance Chief (Kalispell)
Maureen Walsh, District R/W Supervisor
Steve Giard, Acting Utilities Engineering Manager
David Hoerning, Lands Section Supervisor
Greg Pizzini, Acquisition Section Supervisor
Joe Zody, R/W Access Management Section Manager
Jim Davies, Pavement Analysis Engineer
Darin Reynolds, Surfacing Design Supervisor
Jeff Jackson, Geotechnical Engineer
Bret Boundy, Missoula District Geotechnical Manager
Paul Johnson, Project Analysis Bureau
Jean Riley, Planner
Alyce Fisher, Fiscal Programming Section
Dawn Stratton, Fiscal Programming Section
James Freyholtz, District Traffic Engineer (Kalispell)
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John McClafferty, Engineering Division
Kurtis Miros, Engineering Division